

Preliminary DRAFT North Lake Washington Chinook Population - Tier I - Initial Habitat Project List
Includes Potential Restoration and Protection Projects by Reach.
Sammamish River Reaches 1-6B

Reach 1A-1B: Mouth to 68th St. Bridge; upper extent template delta (68th St. Bridge) to 96th St Bridge (RM 2.5)

Sammamish Action Plan Reach 1 = EDT Reach 1A-B

Restoration

Technical Hypothesis: *Add big LWD and jams (larger than attempted in past), Set back levees, Restore riparian vegetation along the Mainstem Sammamish and its tributaries. Focus on addition of backwater pool areas, restoration of side channels, and the use of LWD as cover, to restore functions and processes.*

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N332	1A	2 of 5	new - Sammamish Action Plan	Sammamish River Mouth Wetland Restoration: Restore wetlands on King County property near mouth and on island.		The wetlands are publically owned.	H	H/M
N333	1A	2 of 5	new - Sammamish Action Plan	Lake Pointe Property Riparian and Aquatic Restoration: 45 acre property on Lake Washington at right bank of Sammamish River mouth is targeted for cleanup of hydrocarbons and other pollutants. Restore shoreline as part of redevelopment.			H	H
N334	1B	2 of 5	Sammamish River #14a	Enhance and Reconnect Riparian Wetlands at Wildcliff Shores: Enhance and reconnect riparian wetlands to river, as described in the Sammamish River Corridor Action Plan, at Wildcliff Shores, across from Swamp Creek. Restore riparian vegetation.		Riparian revegetation in progress in 2004. City of Kenmore secured Community Salmon Fund grant. Property is privately owned but community supports work. Project includes some funding to study feasibility of reconnecting wetlands on site.	H/M	H
N335	1B	2 of 5	Sammamish River #15	Swamp Creek Regional Park Wetland and Stream Restoration: As identified in the Sammamish River Corridor Action Plan, restore large, publicly owned wetland complex at the confluence of Swamp Creek and the Sammamish River, creating a diversity of wetland elevations and habitats in the floodplain.		In Corps G.I. Historically an area of many wetlands that are now degraded. Has been identified as a potential mitigation banking site. King County park may go to City of Kenmore.	H/M	M

Protection

Technical Hypothesis: Areas of relatively high-quality habitat forming features (LWD, riparian function, and channel connectivity) and those providing cover and cold water refuge for critical life stages should be protected and maintained.

Project #	Reach #	Reach Prot. Benefit Rank	Existing Prot. Priority (Y/N)	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N336	1B	not ranked		Sam. River #9	Acquire Undeveloped Property at Mouth of Swamp Creek: Purchase parcel to the east of Swamp Creek Regional Park for inclusion in N335 Swamp Creek Regional Park Wetland and Stream Restoration (described above).			H/M	H/M

Reach 2: 96th St Bridge (RM 2.5) to North Creek Confluence (RM 4.5)

Sammamish Action Plan Reach 2 = EDT Reach 2

Restoration

Technical Hypothesis: Add big LWD and jams (larger than attempted in past), Set back levees, Restore riparian vegetation along the Mainstem Sammamish and its tributaries. Focus on addition of backwater pool areas, restoration of side channels, and the use of LWD as cover, to restore functions and processes.

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N337	2	1 of 5	Sammamish River Action Plan	Wetland Restoration on Right Bank in Bothell: Restore historic wetlands on right bank downstream of 102nd Avenue bridge to be seasonally inundated wetlands with small channels connecting them to the river.			H/M	M
N338	2	1 of 5	Sammamish River 14b	Enhance and Reconnect Riparian Wetlands and remnant side channels adjacent to 102nd Avenue bridge on left bank.		Property is in public ownership.	H/M	H/M
N339	2	1 of 5	Sammamish Action Plan and Samm River #13a	Explore Restoration Opportunities at Minor Tributaries (Tributaries 0057A, 0068, and 0069) and Enhance Tributary Confluences: Projects should include as appropriate correction of fish passage barriers, riparian restoration, placement of large woody debris, and creation of cool-water refuge pools. Some restoration work has been done already on Tributary 0057(Horse Creek) but additional measures may be warranted to create a cool-water refuge.		Concern with cutthroat predation. Cold water not as important here. Trail in this reach too. Reach is forested with high banks.	H/M	H
N340	2	1 of 5	Sammamish River #3	Norway Hills Enhancement: Evaluate creation of pools in the Norway Hill area of the river where some groundwater sources are piped to the river as part of the stormwater system. Determine if groundwater inflows at Norway Hill are in need of special protection or mitigation.		Some restoration has been done. River goes underground for a long distance and then daylighted, then underground again.	M	M

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	2			new	No projects identified at this time				

Reach 3A-3B: North Creek Confluence (RM 4.5) to NE 175; NE 175th St (downstream end of agriculture area) to NE 145th (RM 7.5 - agriculture area)

Sammamish Action Plan Reach 3 = EDT Reach 3 A-B

Restoration

Technical Hypothesis: Add big LWD and jams, Set back levees, Restore riparian vegetation along the Mainstem Sammamish and the Sammamish River tributaries. Focus on restoring floodplain connections and promote meandering as a way to increase connections with cool groundwater sources.

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N341	3A	4 of 5	Sammamish River #14c	Restore and Reconnect Riparian Wetlands Adjacent to I-405/SR 522 Interchange at the publicly owned historic wetland area, as described in the Sammamish River Corridor Action Plan.		Historically very large wetland near Cascadia Campus. Feasibility effected by WDOT concerns, wetland degradation, trail and levees block connection, and expensive.	M	L
N342	3B	4 of 5	Sammamish River #13e, 13f, 13g	Enhance Tributary Confluences of Derby, Gold and Woodin Creeks: Enhance tributary confluence of Derby Creek with Sammamish River. Project should include as appropriate correction of fish passage barriers, riparian restoration, placement of large woody debris, and creation of cool-water refuge pool. Fish passage improvements and riparian restoration has already been done on Gold and Woodin Creeks, create pools at mouths for cool water refuge.		Creation of pools at tributary mouths in Corps GI.	H/M	H/M
N343	3B	4 of 5	Sammamish River #5,11,12	Regrade Banks, Create Shallow Rearing Habitat, and Restore Riparian Vegetation: Regrade banks, create flood benches at or below high-water mark, and plant banks and benches with native vegetation. Particular focus should be given to the upper river (RM 11 to RM 13.6) and downstream of the major tributaries. An "emerging" bench/ wetland would provide juvenile salmonid shallow rearing habitat.		Right bank is in Agricultural District. Left bank is business park.	H	M
N344	3B	4 of 5	Sammamish River #14d	Enhance and Reconnect Riparian Wetlands Near Gold Creek: Enhance and reconnect riparian wetlands to river, as described in the Sammamish River Corridor Action Plan, at the historic wetland and meander area near Gold Creek.		Private ownership. Similar example is Cascadia Campus North Creek.	H/M	L

Protection

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	3B			new	No projects identified at this time				

Reach 4A-4B: NE 145th St. to NE 116th St.; NE 116th St. to Lower end of City of Redmond urban area (Willow Golf Course)

Sammamish Action Plan Reach 4 = EDT Reach 4 A-B

Restoration

Technical Hypothesis: Add big LWD and jams, Set back levees, Restore riparian vegetation along the Mainstem Sammamish and the Sammamish River tributaries. Focus on restoring floodplain connections and promote meandering as a way to increase connections with cool groundwater sources. The impact of surface water and groundwater withdrawals on flow conditions should also be investigated

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N345	4A	5 of 5	new	Explore Restoration of Historic Channel Habitat: Reconnect historic side channel to river on left bank between 116th and 124th and restore riparian vegetation.		King County may acquire portion of property. There is community support for project. Kirkland High School wilderness group conducted survey of old meander. Interest in soccer field at site. Part of area is within agricultural district and part in City of Remond.	H/M	M/L
N346	4A	5 of 5	Sammamish River #13b and #4	Enhance Tributary Confluences with Sammamish River at Tributary 0095 A, Left bank Tributary 0095 (misnamed), and Tributary 0096: Restore riparian vegetation, improve connection of tributary to the river, enhance the mouths and create cool water refuge pools. Trib 0095B has had substantial work done as part of the 124th Street mitigation.		Work will be more difficult in upstream part because this area is an agricultural district. Restoration at mouth should be feasible. Care should be taken to not drain groundwater.	H	M
N347	4A	5 of 5	new	Reconnect Wetland 38: Reconnect wetland 38 to the Sammamish River. King County Wetland 38 is located at the south end of the City of Woodinville on the Redhook Brewery site.		Would need to evaluate whether reconnecting wetland to the river would drain the wetland. Land owned by Red Hook Brewery.	H	M
N348	4A	5 of 5	new	Restore Full Meander in Reach with a connection to alluvial fan. Restore riparian vegetation.		In agricultural district which would make it more difficult to do. Benefit would be cooling water. Uncertainty due to how much river has been lowered, expense, and need for property acquisition.	H	L
N349	4A	5 of 5	new - Sammamish Action Plan and Sammamish River #5/11	Restore Small Meanders and Riparian Restoration: This reach is the most straightened reach of the river. Explore restoration of small meanders (similar in scale to Redmond RiverWalk Project) and regrade. Then restore riparian vegetation.		Restoration would need to be consistent with Farmland Preservation Program. Lower benefits than full meanders for funds spent.	H/M	M

N350	4B	5 of 5	Sammamish River #14e; Sammamish Action Plan	Wetland Restoration and Side Channel Restoration on Right Bank across from Willows Run Golf Course: Restoration elements could include removal of non-native vegetation, excavation of side channel, and placement of LWD in channel. Enhance and reconnect riparian wetlands to river. Explore remeandering river at this location. See N354 as well.		Significant benefit if cold water from creeks is restored to area. Potential significant constraint at site is location of King County sewer line under the trail, which will make construction of an open channel for reconnection more difficult depending on pipe elevation. Need an easement for restoration. Project is identified in Corps G.I.	H	M/L
N351	4B	5 of 5	Sammamish River #5/11	Riparian Restoration between Willows Golf Course and NE 116th: Restore riparian vegetation in remainder of reach 4B and remove invasives. One-third to one-half of vegetation already restored on left bank.		Good candidate for revegetation because no regrading to be done in reach. Area is blackberry infested, hot and without shade. KC Parks long-term plan is to soft-surface equestrian trail on left bank.	H/M	H/M
N352	4B	5 of 5	Sammamish River #13c	Enhance Tributary 0101 Confluence: Replace culvert with bridge. Explore adding LWD, pool, and riparian vegetation to create cool-water refuge areas at Tributary 0101.		Is one of the few tributaries without roads, very cold, good gravel source. Concern expressed that the tributary is working well the way it is - high fish use. Maybe should do not be restored to avoid disturbing it. Constraints include steep entrance under trail and presence of sewer line.	M	M
N353	4B	5 of 5	new - Sammamish Action Plan	Wetland Restoration in Willows Run Golf Course: Explore opportunities for reconnection of wetlands/ponds with river.		Landowner willingness unknown. May be water quality issues with proposal. Golf courses is potential user of King County wastewater reclaimed water pilot project; need to coordinate. Also need to consider hydrology - don't drain area. Project is not in Corps G.I.	M/L	L

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N354	4B	not ranked	Y	Sam River 10	Acquire Property Across from Willows Run Golf Course: Acquire 20-acre parcel on right bank across from Willows Run Golf Course for floodplain and wetland restoration.		There are some KCD and Redmond Funds for project.	H	M

Reach 5: Lower end of City of Redmond urban area (top of Willow Golf Course) to Bear Creek Confluence.

Sammamish Action Plan Reach 5 = EDT Reach 5

Restoration

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Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N355	5	3 of 5	Sammamish River #2	Lower Bear Creek Restoration and Pool Creation: As identified in Sammamish River Corridor Action Plan, restore lower 2/3 mile of Bear Creek to its confluence with the river. This process will include placement of large woody debris in the river upstream of the confluence to create a cold-water refuge pool and delay mixing of warm river water with much cooler water from Bear Creek.		The scope of the proposed Corps 1135 project on this site does not include the creation of a pool at the mouth. The difficulty in implementing this project in the past (has been in negotiation between Corps, Redmond, and WDOT) is a barrier to feasibility. There is scientific and technical support behind it because there are very high benefits, including critical refuge area for Chinook.	H+	M
N356	5	3 of 5	Sammamish River #5,11,12	Regrade Banks, Create Shallow Rearing Habitat, and Restore Riparian Vegetation: Regrade banks, create flood benches at or below high-water mark, and plant banks and benches with native vegetation. Particular focus should be given to the upper river (RM 11 to RM 13.6) and downstream of the major tributaries. An "emerging" bench/ wetland would provide juvenile salmonid shallow rearing habitat. Explore lowering benches from earlier restoration projects (eg. Mammoth Sammamish north of Willows Creek on west side and Willows Creek outfall). Include riparian revegetation for entire reach but only regrading from NE 90th to NE 100th.		Sammamish Action Plan identifies reaches 5 & 6 as especially important for riparian restoration. Feasibility limited by high cost, existing width of banks and not all properties in public ownership.	H	M
N357	5	3 of 5	Sammamish River #13d	Enhance Tributary Confluences at Willows and Peters Creeks: Enhance tributary confluences with Sammamish River at Willows Creek (# 0102) and Peters Creek (#0104). At Willows Creek: enhance pool at mouth to be more natural, control invasive vegetation, and lower floodplain bench. At Peters Creek: improve fish passage at weir, create pool at mouth and add LWD to create a cool-water refuge pool area.		Project to be done summer 2004 upstream in Peters Creek.	H/M	M

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	5	not ranked		new	No projects identified at this time				

Reach 6A-B: Bear Creek Confluence (RM 12.5) to Weir (bottom of Lake Sammamish affected section); Weir to Lake Sammamish (RM 13.6)**Restoration**

Technical Hypothesis: Add big LWD and jams, Set back levees, Restore riparian vegetation along the Mainstem Sammamish and the Sammamish River tributaries.

Project #	Reach #	Reach Restor. Benefit Rank	NTAA #	NTAA Name & Description	Approx. Cost	Notes, Key Uncertainties	Benefits to Chinook H, M, L	Feasib. H, M, L
N358	6A	not ranked	Sammamish River #7; Sammamish Action Plan	Restore Transition Zone: Restoration of the left meander (Marymoor meander) below the weir as either the main channel or a seasonal channel with wetlands is recommended. Reroute tributary 0141 into wetland. Enhance or create pools at small tributary outlets, at meander bends downstream of the transition zone, and just downstream of the weir. Restoration elements could include excavation of new channel, creation of pools, and an overflow bench with wetland vegetation; removal of non-native vegetation; placement of gravel substrate in new channel; connection to capture hyporehic flows; and revegetation of riparian and wetland areas with native plants.		This Sammamish River Action Plan considers this reach (EDT Reach A-B) the highest priority for pool enhancement and creation. There are only two deeper areas or pools in reach and they are critically important due to high temperatures. Restoration will need to meet U.S. Army Corps of Engineers requirements for channel conveyance to minimize flood risks to lakeshore properties. Potential archeological site may add difficulty. Need modeling for feasibility - SRFB grant paying for hydrologic model; look at effect of willows on backwater flows, weir ratings for model; important information for future negotiations between Corps and KC. Important for future restoration; good habitat for juveniles, but high temperatures a problem for adults. No sediment bedload so created pools will not be filled.	H	H/M
N359	6A	not ranked	Sammamish River #12	Regrade Banks and Create Flood Benches: Opportunities in this reach to regrade banks, create flood benches at or below high-water mark, and plant banks and benches with native vegetation are near the Marymoor Park entrance. It is very shallow at bridge. Additional pools should be created downstream of the Marymoor Park entrance road on the outside of the meander bend.		Grading should occur prior to expansion of revegetation projects at Marymoor entrance. Left bank should be setback as Metro trunk is on right bank. Other concerns are roads, utilities, and architecture. There is enough flood conveyance with the regrading.	H	M
N360	6A	not ranked	new - Sammamish River Action Plan	Enhance Existing Pools and Create New Pools: Create new pools at mouth of recently rerouted tributary on the south side of Marymoor Way and just upstream of the entrance bridge.			H	H/M
N361	6A	not ranked	Sammamish River # 5/11; Sammamish Action Plan	Riparian Revegetation between Weir and Confluence of Bear Creek: A lot of riparian restoration has been done by King County and the City of Redmond in reach 6A. Continue to enhance, maintain, and expand areas of revegetation to provide shade. Control invasive vegetation.		Coordinate with bank regrading projects so that revegetation occurs second or revegetation work is done in a way that does not conflict with future regrading work.	M	H

N362	6B	not ranked	Sammamish River # 5/11; Sammamish Action Plan	Riparian Revegetation Between Lake Sammamish and Weir: Continue and expand projects such as Sammamish Re-Leaf and Redmond Riverwalk to plant early successional riparian vegetation to provide shade. Property is all under public ownership, and future plans for a second trail near this reach of river would provide good opportunities for riparian restoration.		Area needs trees. Explore options to reduce temperatures.	H/M	H
N363	6B	not ranked	new	Enhance mouths of two unnamed tributaries in reach. Add LWD to create a pool at mouths and encourage emergent vegetation. Explore restoration of tributaries to reduce urban runoff into Sammamish River and induce cooler temperatures.		One tributary has the highest flows in Redmond - good source of cool water. One tributary has high sediment. Chinook in reach are mostly Issaquah fish, but some North Lake Washington fish.	H	H

Protection

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N364	6B	not ranked		new	Protect existing high quality riparian vegetation in reach 6B. Includes Marymoor dogwalk and Lake Sammish Rowing areas. Do not encourage recreational use of left bank.		Possible trail system to be added in reach.	H/M	H